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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/930,693	08/17/2001	Koji Matsuo	KOJIM-417	1573

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EXAMINER

LOPEZ, CARLOS N

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 03/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/930,693

Applicant(s)

MATSUO ET AL.

Examiner

Carlos Lopez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) 4-6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 4-6 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-3, drawn to process for producing synthetic quartz, classified in class 65, subclass 17.4.
- II. Claims 4-6, drawn to a synthetic quartz glass, classified in class 65, subclass 397.

The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by another and materially different process such as having a burner oriented at 180°.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

During a telephone conversation with John Sopp on 3/14/03 a provisional election was made with traverse to prosecute the invention of Group 1, claims 1-3. Affirmation of this election must be made by applicant in replying to this Office action. Claim 4-6 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear if claim is a Jepson Claim. For examination purpose claim 1 will be treated as a Jepson claim.

In claim 3, the term "the step of heat treating the synthetic quartz glass" lacks antecedent basis. It is unclear if the "the synthetic glass quartz" refers to the porous silica matrix or if it is an independent distinct step of treating a synthetic glass quartz.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yaba et al (US 5,326,729) in view of Ito (JP 04-074728). Yaba discloses feeding silica forming raw material, hydrogen, oxygen and fluorine gas to a reaction zone and flame hydrolyzing the silica forming raw material to form particles of fluorine containing silica which is deposited on a rod or plate (Column 4, lines 47-59). The deposited silica forms a porous silica matrix wherein it is heated and vitrified in a fluorine gas atmosphere (Bridging paragraph of Column 5-6). Yaba is silent disclosing that the rod substrate is rotatable. However, Ito discloses a rotatable rod substrate for the deposition of soot (silica) (Machine translation of Ito's Abstract & Fig. 1). Additionally, Ito teaches that providing a burner at an angle in the range of 0 to 85° (corresponding to an angle of 95 to 180° between the respective center of axis of the burner and matrix as recited in Applicant's claim 1) prevents deterioration of transmission loss of a waveguide (Note machine translation of Ito's Abstract). It is noted that the center axes of the matrix is the y axis as shown in figure 4 that would be the center axis of rotatable rod 21 and that the

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center axes of the burner is denoted by numeral 26 as shown in figure 4 .At the time the invention was made it would have been obvious to one of ordinary skill in the art that Yaba would have a rotatable rod with a burner at angle of 0 to 85° (corresponding to an angle of 95 to 180° between the respective center of axis of the burner and matrix as recited in Applicant's claim 1) in order to prevent deterioration of transmission loss of a waveguide as taught by Ito. Furthermore, in view that the teachings of Yaba and Ito meet the claimed steps of Applicant's claim 1, it would be expected that a resultant silica matrix may have the claimed density and distribution of the silica matrix.

As for claim 3, Yaba teaches in bridging paragraph 5-6, that the quartz glass is heat treated in a hydrogen gas-containing atmosphere.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yaba et al (US 5,326,729) in view of Suto et al (US 4,367,085 . Yaba discloses feeding silica forming raw material, hydrogen, oxygen and fluorine gas to a reaction zone and flame hydrolyzing the silica forming raw material to form particles of fluorine containing silica which is deposited on a rod or plate (Column 4, lines 47-59). The deposited silica forms a porous silica matrix wherein it is heated and vitrified in a fluorine gas atmosphere (Bridging paragraph of Column 5-6). Yabe is silent disclosing that the rod substrate is rotatable. However, Ito discloses a rotatable rod substrate for the deposition of soot (silica) (Abstract & Fig. 1). Additionally, Suto teaches that providing a burner at an angle Θ in the range of 10 to 60° (which if using 60° it would correspond to applicant's angle of 120°) reduces cracking at the periphery of the silica matrix (Note Suto Col. 5, lines 1-6). The angle Θ is formed by the center of axes of the burner (See Suto Col. 5,

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lines 28-29) and the central axes of the supporting rod of the matrix which is deemed as being the center axes of the silica matrix (See Suto Col. 5, line 30). Therefore, at the time the invention was made it would have been obvious to one of ordinary skill in the art that Yaba would have a silica matrix with a burner at angle of 60° (which corresponds to an angle 120° between the respective center of axis of the burner and matrix as recited in Applicant's claim 1) in order to reduce cracking on the periphery of the silica matrix as taught by Suto. Furthermore, in view that the teachings of Yaba and Ito meet claimed steps of Applicant's claim 1, it would be expected that a resultant silica matrix may have the claimed silica matrix properties such as density and distribution.

As for claim 3, Yaba teaches in bridging paragraph 5-6, that the quartz glass is heat treated in a hydrogen gas-containing atmosphere.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References C-L, N and V-W have been cited in PTO-892 to show the state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos Lopez whose telephone number is (703) 605-1174. The examiner can normally be reached on Mon.-Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (703) 308-1164. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7718 for regular communications and (703) 305-3599 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.

C.L
March 14, 2003


STEVEN P. GRIFFIN
SUPERVISORY PATENT EXAMINER
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